City Manager Approval_____ Date_____

1.0 PURPOSE

1.1 BACKGROUND

The Hearing Conservation Program establishes guidelines, policies, and procedures to protect City employees from hazardous noise levels that may be present in the workplace.

1.2 SCOPE

The Hearing Conservation Program applies to employees whose noise exposures equal or exceed an average of 85 decibels during their workday. The Hearing Conservation Program shall apply to all City departments and offices directly responsible to the City Manager. It is also requested that elective offices and other independent offices and departments comply with the Hearing Conservation Program, if affected, in the interest of administrative uniformity.

1.3 POLICY

It is the policy of the City of Long Beach to provide employees with a safe and healthful working environment. This is accomplished by utilizing facilities and equipment that have all feasible safeguards incorporated into their design. When effective engineering controls are not feasible, or when they are being initiated, administrative controls will be used when and where possible followed by the use of personal protective equipment.

2.0 DEFINITIONS

2.1 Action Level (AL): The noise exposure equal to or exceeding an 8-hour, time-weighted average of 85 decibels (dBA), or equivalently, a dose of 50%. State regulations require the employer to administer a hearing conservation program whenever employee noise exposures exceed the AL noise standard.

2.2 Audiogram: A record of hearing threshold levels measured at several different frequencies, usually 500 to 6,000 hertz. The audiogram may be presented graphically or numerically. Hearing level is shown as a function of frequency.

2.3 Baseline Audiogram: The audiogram against which future audiograms are compared.

2.4 Criterion Sound Level: A sound level of 90 decibels.

2.5 Decibel A-Weighted: A unit of measurement of sound most closely related to the human ear. On the A-weighted decibel scale, zero is the threshold of hearing and 120 decibels is the threshold of pain.

2.6 Representative Exposure: Measurements of an employee's noise dose or 8-hour time-weighted average sound level deemed to be representative of exposures of other employees in the workplace.

2.7 Standard Threshold Shift: A change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2,000, 3000, and 4,000 Hz in either ear.

3.0 RESPONSIBLE PERSONS

3.1 CITY SAFETY OFFICER

3.1.1 The City Safety Officer shall:

A. Assist departments in the identification of work areas and equipment within City facilities where noise levels exceed 85 dBA.
B. Develop and assist in the implementation and maintenance of an effective hearing conservation program.
C. Schedule the employee audiometric tests.
D. Determine which employees are required to be in the Hearing Conservation Program based upon noise dosimetry and sound level meter results.
E. Provide audiometric test results and noise monitoring results to employees.
F. Resurvey of work areas and equipment where noise levels exceed 85 dBA every two (2) years.

3.2 MANAGERS, SUPERINTENDENTS, AND SUPERVISORS

3.2.1 Managers, Superintendents, and Supervisors shall:

A. Ensure that employees exposed to noise levels of 90 dBA or greater have access to appropriate hearing protective devices.
B. Responsible for enforcing the use of hearing protection in designated high noise areas.
C. Implement the Hearing Conservation Program.
D. Inform the City Safety Officer of any new process or equipment changes that may alter existing noise levels.
E. Eliminate workplace noise exposure during at least the 14-hour period preceding audiometric testing.

3.3 EMPLOYEES

3.3.1 Employees shall:

A. Wear hearing protection as required. Employees not wearing their hearing protection are subject to disciplinary action per the City's Injury and Illness Prevention Program.
B. Participate in the audiometric examinations and training, as required.
C. Inform their supervisor of any process or equipment changes that have altered the existing noise levels in their work area.
D. Avoid high levels of non-occupational noise exposure during at least the 14-hour period preceding audiometric testing.

4.0 NOISE EXPOSURE EVALUATIONS

4.1 IDENTIFICATION OF HAZARDOUS NOISE AREAS

The City Safety Office will assist departments to identify work areas within City facilities where noise levels equal or exceed 85 dBA, to identify employees that should be in the hearing conservation program and to identify appropriate hearing protection. Records shall be maintained by the City Safety Office and updated at

least every two years to determine if any alteration in noise levels has occurred. Those areas where noise levels are below 85 dBA will not be routinely monitored. Identification of hazardous noise areas and equipment and any subsequent noise monitoring will be conducted by the City Safety Officer, Department Safety Officer, or a Certified Industrial Hygienist.

Signs will be posted at the entrance to any work area where noise levels exceed 90 dBA, requiring anyone entering the area to wear proper hearing protection. Personnel who work in these areas shall have hearing protection supplied to them. It is the responsibility of the area supervisor to ensure that these precautions are maintained.

4.2 NOISE MEASURMENTS AND EXPOSURE ASSESSMENTS

In order to effectively control noise it is necessary that the noise be accurately measured according to standard procedures and that the measurements be properly evaluated against accepted criteria. All noise monitoring will be conducted in accordance with established standard operating procedures.

The monitoring of employees for noise exposure is made up of two parts, area and personal monitoring. Area measurements are generally obtained first. If noise levels are at or above 85 dBA, personal monitoring using dosimeters is then performed to obtain the 8-hour time weighted average noise exposure. Sample data sheets will be issued to record monitoring data for both area and personal noise monitoring results.

4.2.1 Area Monitoring

In an area survey, measurements of environmental noise levels are recorded using a sound level meter to identify work areas where employees' exposures may be above hazardous levels, and where more thorough exposure monitoring may be needed. Area monitoring is conducted using a calibrated sound level meter set to the A scale, slow response. Within the area of interest, several different locations will be measured. Typical measurement locations would include:

- In the hearing zone at the employee's normal work location;
- Next to the noise source(s);
- At the entrance(s) to the work area; and
- At other locations within the area where the employee might spend time working.

A rough sketch of the area will be included with the results showing the locations where the noise readings were obtained.

If the noise levels are below 85 dBA in the area, no further monitoring will be required for that area. Should any of the noise measurements equal or exceed 85 dBA, records shall be maintained as to the noise levels recorded, where they were taken, and the source(s) of the noise. These records shall be updated at least once every two years to determine if any changes have occurred that would warrant re-monitoring of exposed personnel. If any of the measurements equal or exceed a noise level of 85 dBA, employees who

work in or near the high noise area or equipment shall have their noise exposure determined through personal monitoring using dosimeters.

4.2.2 Personal Monitoring

Determination of the noise exposure level will be accomplished using calibrated noise dosimeters. Each employee to be monitored will have a dosimeter placed on him/her at the beginning of his/her normal work shift with the microphone placed in the hearing zone. The dosimeter will be worn for the full duration of the work shift while the employee performs his/her normal work routine. At the end of the work shift, the dosimeter will be removed. Background information will be collected from each employee detailing job description, unusual job activities, etc., for the time period sampled. Those employees whose noise exposure exceeds 85 dBA on an 8-hour time weighted average (TWA) will be included in the Hearing Conservation Medical Surveillance Program.

4.3 RE-MONITORING OF HAZARDOUS NOISE AREAS

All areas where noise levels equal or exceed 85 dBA shall be re-monitored at least every two years. Employees who work for extended periods of time (>2 hours) in the high noise areas and where their 8-hour TWA equals or exceeds 85 dBA will be monitored every year to determine their personal noise exposure.

Whenever an employee exhibits a standard threshold shift, the employee's work place shall be re-monitored to identify and ameliorate the cause.

4.4 RE-MONITORING DUE TO CHANGES

Any area with noise levels that equal or exceed 85 dBA shall also be re-monitored whenever a change in production process, equipment, or controls increase the noise exposure such that additional employees are exposed to noise levels at or above 85 dBA on a time-weighted average basis. Areas where the noise levels have dropped below 85 dBA due to alterations in equipment, controls or process changes shall be eliminated from the monitoring program.

5.0 NOISE CONTROL METHODS

5.1 ENGINEERING AND ADMINISTRATIVE CONTROLS

The primary means of reducing or eliminating personnel exposure to hazardous noise is through the application of engineering controls. Engineering controls are defined as any modification or replacement of equipment, or related physical change at the noise source or along the transmission path that reduces the noise level at the employee's ear. Engineering controls such as mufflers on heavy equipment exhausts or on air release valves are required where possible.

Administrative controls are defined as changes in the work schedule or operations which reduce noise exposure. If engineering solutions cannot reduce the noise, administrative controls such as increasing the distance between the noise source and the worker or rotation of jobs between workers in the high noise area should be used if possible.

5.2 PERSONAL PROTECTIVE EQUIPMENT

Hearing protective devices (ear plugs, muffs, etc.) shall be the permanent solution only when engineering or administrative controls are considered to be infeasible or cost prohibitive. Hearing protective devices are defined as any device that can be worn to reduce the level of sound entering the ear. Hearing protective devices shall be worn by all personnel when they must enter or work in an area where the operations generate noise levels of:

- Greater than 90 dBA sound levels, or
- 140 dB peak sound pressure level or greater.

In all cases the chosen hearing protectors shall have a Noise Reduction Ratio (NRR) high enough to reduce the noise at the eardrum to below 85 dBA.

6.0 AUDIOMETRIC TESTING PROGRAM

6.1 NOTIFICATION

Upon identification of employees whose 8-hour TWA equals or exceeds 85 dBA, the City Safety Office will recommend to the employee's supervisor, in writing, of the need to enroll certain employee(s) in the Hearing Conservation Medical Surveillance Program.

In work locations where either through administrative or engineering controls, noise levels are found to have fallen such that an employee's 8-hour TWA is below 85 dBA, the City Safety Office shall notify Occupational Health and the employee's supervisor, in writing, that the employees working in the area are no longer required to be enrolled in the Hearing Conservation Medical Surveillance Program. The final decision as to an employee's enrollment status will be left with the Occupational Health Services Officer.

The results of area and personal re-monitoring shall be forwarded to Occupational Health upon completion of the noise surveys.

6.2 AUDIOMETRIC TESTING

All employees exposed to noise levels equal to or greater than 85 dBA receive annual audiometric exams. Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise. This requirement may be met by wearing hearing protectors which will reduce the employee's exposure to a sound level of 80 dBA or below. The audiometric testing program includes:

- Establishing a valid baseline audiogram against which subsequent audiograms can be compared;
- Obtaining a new audiogram at least annually; and
- The technician's determination of audiogram validity and of whether or not a standard threshold shift has occurred, by comparing each employee's annual audiogram to their baseline audiogram.

If the annual audiogram shows that an employee has suffered a standard threshold shift, a retest may be obtained within 30 days through Occupational Health. The results of the retest are considered as the annual audiogram. If a comparison of the

annual audiogram to the baseline audiogram indicates a persistent standard threshold shift:

- A written notification of this fact is submitted to the affected employee within 21 days.
- The affected employee's supervisor completes and submits a Supervisor's Report of Incident, recording the standard threshold shift as having occurred on the date of the retest.
- The employee's standard threshold shift will be listed on the OSHA 300 Log, recording the date of the illness as the date of the retest.

An audiologist, otolaryngologist, or physician must review problem audiograms, in conjunction with the required paperwork, to determine whether there is a need for further evaluation. If a physician determines that a standard threshold shift is not work related or aggravated by occupational noise exposure, the associated entry on the OSHA 300 log may be lined out. Otherwise, if confirmed to be work related or aggravated by occupational noise exposure:

- The affected employee will be fitted or refitted with hearing protectors, trained or retrained in their use and care, provided with hearing protectors offering greater attenuation if necessary, and be required to use them.
- The affected employee will be referred for a clinical audiological evaluation or an otological examination, as appropriate, if the physician determines that additional testing is necessary, or if the City suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
- The affected employee will be informed of the need for an otological examination if a medical pathology of the ear is suspected to be unrelated to the use of hearing protectors.

7.0 EMPLOYEE TRAINING

All employees exposed to noise levels equal to or greater than 85 dBA receive annual hearing conservation training. The training program includes:

- The effects of noise on hearing.
- The purpose of hearing protectors, advantages, disadvantages and attenuation of various types.
- Instructions on selection, fitting, use and care of hearing protection.
- The purpose of the audiometric testing and an explanation of the test procedure and results.

8.0 RECORDKEEPING

Records for the Hearing Conservation Program are maintained in the City Safety Office. The records include:

- Results of the noise dosimetry and sound level meter measurements are maintained for two years, or as long as they apply to the operation monitored.
- Results of the audiometric tests maintained through the duration of the affected employee's employment.

- The Supervisor's Report of Incident for a persistent standard threshold shift, is maintained for three (3) years.
- The OSHA 300 Log is maintained for five years following the end of the calendar year to which it relates.